

CLAIMS

- 5 1. Device for rescue and safety for swimming-pools or leisure parks, characterised by the fact that it consists of:
- 10 - a wristband (1) consisting of a cardiac-arrest detector (65), a printed circuit (7), a transmitter (8), a micro-controller (9), a transponder (10), at least one battery (13), a personal identification code (2), a means of display (3), a panic button (4) and a contact button (75) consisting of a push button in contact with the wrist and which, when pushed when the wristband is closed, activates a pulse detector (88), and when this is activated, a light comes on (14) and there are means of managing the cardiac arrest detector and panic button.
- 15 - the means to trigger an automatic rescue device.
- a location device (27) with at least one central receiver capable of communicating with other control centres (31) and warning an emergency centre (35).
- 20 2. Device as per claim 1, characterised by the fact that the wristband contains a water detector (39) that includes the means for activating/deactivating it.
- 25 3. Device according to one of claims 1 and 2, characterised by the fact that the rescue device is an inflatable grid (26) consisting of means of uplifting, checking the vacuum and of inflation/deflation.
- 30 4. Device according to one of claims 1 to 3, characterised by the fact that the means for managing the panic button (4) and the cardiac-arrest detector (65), consist of:
- 35 - a pulse detector (88) with two light sources (5, 96) in the form of electroluminescent diodes, one of the light sources (5) being located on the wrist (99) and passing through human tissue (5) and the other (96) being located beneath the wrist, these light sources (5, 96) being included in the wristband, the beam emitted by one of the sources (96) being reflected on a light sensor (6).
- the means for generating an alarm code (89) corresponding to pressing of the panic button (4)
- the cardiac-arrest detector (65) being capable of Y/N determination of whether a pulse is present (93) and of reading pulses in loops (88),

- a fault meter, operating in loops, with re-setting (91), with a maximum fault tolerance threshold, capable of transmitting alarm codes (95) on FM, either when the fault meter has exceeded the permitted limit or when the panic button (4) is activated.

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5. Device as per claim 4, characterised by the fact that the pulse detector (88) consists of 2 x 2 diodes (5, 96), located on either side of a half-wrist band above/below the wrist, with two light detectors (6) on either side of the wrist.

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6. Device as per one of the claims 4 or 5, characterised by the fact that the pulse detector (88) consists of a diode (5), located on one side of the wrist and a reference diode (96) on the opposite side, which is surrounded by two light sensors (6) for detecting the beam from each of the diodes.

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7. Device as per one of the claims 1 to 3, characterised by the fact that the wristband (1) includes an identification code (2) recorded in the transponder (10), which, thanks to a transponder detector (18), is capable of opening and closing doors, lockers and triggering an alarm (24). The lockers are managed overall or in rows via the microcontroller (9).

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8. Device as per claim 2, characterised by the fact that the water detector (39) consists of either a duct (41) with at least two apertures through which water can enter (42), such duct (41) containing electrodes (40) connected to a water detection circuit capable of engaging a rescue device or an alarm; or two contacts sufficiently distant from each other and not in contact with the skin; with protective coverings rendering them watertight during bathing.

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9. Device as per one of claims 1 to 8 characterised by the fact that the wristband (1) consists of a box, a panic button (4), a contact button (75) which is a push button in contact with the wrist, each of which is located inside the box and covered by a watertight membrane (47).

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10. Device as per one of claims 1 to 9, characterised by the fact that the location detector device (27) consists of field detectors (49) with antennae (32) passing through a multiplexer (67), a level adapter (68) and the microcontroller (9).

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11. Device as per claim 3, characterised by the fact that the inflation of the grid (26) is managed by a compressed air/gas (29) pipe, an emergency electro-valve (55), a non-emergency electro-valve (56), an electro-valve for discharging (57) and a pressure relief valve (58) for emergencies should the necessary inflation pressure not be the same as that required for

powering the discharge, a pressure relief valve (59) for non-emergencies, a cut-out switch (60), a venturi tube (62) and a vacuum switch (63) for controlling the vacuum. The entire system is managed by the microcontroller (9) to which the following are connected: the cardiac-arrest detector (65), the panic button (4), the contact button (75) which is a push button in contact with the wrist, a non-emergency reset button (69), a vacuum switch (63), a descent button (70), a lifeguard button (71), an alarm (24), a monitor (66), a control keyboard (72), a display panel for the control centre (73) and a computer (74).

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12. Device as per claim 3, characterised by the fact that the grid (26) consists of flanges and is uplifted either by straps (51) and strap guides (53) fixed under the flanges or by extendable bars (97) which are housed within the strap guides (53), such supporting bars, once extended, resting on the edge of the swimming pool and thus raising the grid (26) in order to enable a robotic arm to slide over the surface of the water, if the robot has an arm.

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13. Device as per one of claims 1 to 12, characterised by the fact that the location detector device (27) is connected to a solar battery or batteries.

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